ONCOLOGICAL SCIENCES Guidelines

The Oncological Sciences (ONC) Integrated Review Group (IRG) will consider applications involving basic, translational, and clinical investigations that encompass cancer prevention, initiation, promotion, progression, diagnosis and treatment. Specifically, the ONC IRG reviews research grant applications related to chemical carcinogenesis, cancer genetics, nutritional carcinogenesis, radiation effects, and tumor biology; mechanism of action of cancer therapeutic agents in both *in vitro* and *in vivo* model systems; development and evaluation of experimental therapies of neoplastic diseases, translation of basic research to clinical practice; development or optimization of treatment modalities; chemoprevention; and development of biomarkers/signatures for tumor detection and diagnosis.

To that end, we have proposed thirteen study sections:

I. Cancer Etiology Study Section (CE)
II. Cancer Genetics Study Section (CG)
III. Cancer Molecular Pathobiology (CAMP)
IV. Tumor Cell Biology Study Section (TCB)
V. Tumor Microenvironment Study Section (TME)
VI. Tumor Progression and Metastasis Study Section (TPM)
VII. Chemo/Dietary Prevention Study Section (CDP)
VIII. Cancer Biomarkers Study Section (CBSS)
IX. Radiation Therapeutics and Biology Study Section (RTB)
X. Cancer Immunopathology and Immunotherapy Study Section (CII)
XI. Drug Discovery and Molecular Pharmacology Study Section (DMP)
XII. Developmental Therapeutics Study Section (DT)
XIII. Clinical Oncology Study Section (CONC)

The study sections that compose the ONC IRG are amongst the first to be proposed for re-organization and implementation. As a result, some of the Teams that will develop recommendations for other IRGs that may share interests in areas of research with the ONC IRG have not yet met or completed their deliberations. Therefore, the proposed “shared interest” guidelines for each of the study sections listed below are tentative, pending further input from the remaining study section design Teams, the community, and the CSR Advisory Committee to the Director, CSR

I. Cancer Etiology (CE)

The Cancer Etiology Study Section reviews grant applications related to the causal agents, processes, and cells involved in tumor pathogenesis. The areas included within CE involve the conversion of normal cells to cancer cells, including neoplastic lesions and events leading to the tumor becoming invasive. Organ-specific oncogenesis is included in this study section. Tools often utilized in these studies include: animal models (e.g., knockouts and transgenics), in vitro models (e.g., cell lines and explant cultures), functional imaging (e.g., Fluorescence Resonance Energy Transfer- FRET), and structural biology.

Specific areas covered by CE include:

- Signal transduction: including growth factors, cytokines, receptors, post-translational modifications and intracellular mediators (such as arachidonic acid and transcription factors)
- Protein degradation and stability (including ubiquitination)
- Gene regulation: including transcription factors, RNA stability and processing, as they contribute to oncogenesis
- Immortalization and senescence: including the action of telomerase
- Differentiation/transdifferentiation in oncogenesis
- Cell cycle/checkpoints (as related to initiation events)
- Chemical- and radiation-induced mutagenesis
- Processes involved in chemical carcinogenesis leading to damage to the genome (including DNA adduction, xenobiotic metabolism, and identification of causal agents)
- Viral carcinogenesis
- Metabolism: including metabolism of endogenous compounds
- Stress responses: including oxidative stress and reactive oxygen species

CE has the following shared interests within the ONC IRG:

- With CG regarding hereditary tumors, gene polymorphisms and pathogen-associated tumors. In general genetic studies would be assigned to CG; if emphasis is on the etiology of disease it would be assigned to CE.
- With CAMP in signal transduction, protein degradation, cell cycle checkpoint, etc: In general, CAMP reviews studies related to participation in oncogenesis while CE is more involved in understanding fundamental processes.
- With CBSS regarding discovery and evaluation of genetic and epigenetic abnormalities in tumors that may serve as clinical biomarkers for disease prognosis or predicting response to therapy. When the focus is on identification of markers for clinical applications, the proposal should be assigned to CBSS; when the focus is on understanding the disease process the applications should be assigned to CE.
- With RTB regarding oxidative stress, reactive oxygen species, cell cycle/checkpoints, and signal transduction: studies related to modulation of radiation response or mechanisms of action should be assigned to RTB; broader studies should be assigned to CE.
- With DMP as it relates to processes and targets involved in oncogenesis. Studies relating to drug discovery and development should be assigned to DMP, more basic studies of cancer processes and targets should be assigned to CE.
- With DT in studies of signal transduction, cell cycle regulation, apoptosis, and differentiation. Therapeutically oriented studies, should be assigned to DT, more basic studies should be assigned to CE.

CE has the following shared interests outside the ONC IRG:

- With IRG-1 (Biological Chemistry and Macromolecular Biophysics): In general, molecular studies not focused on the etiology of cancer would be assigned to IRG-1; if the study is focused on the etiology of cancer, it would be assigned to CE.
- With IRG-2 (Molecular Approaches to Gene Function): In general, gene function studies not uniquely relevant to the etiology of cancer would be assigned to IRG-2; studies focused on the etiology of cancer would be assigned to CE.

- With IRG-3 (Molecular Approaches to Cell Function and Interactions): In general, if the findings could also be relevant to another area of biomedical research, the application would be assigned to IRG-3; cell studies uniquely relevant to the etiology of cancer would be assigned to CE.
- With IRG-4 (Fundamental Genetics and Population Biology): In general, studies for which the findings could also be relevant to another area of biomedical research they would be assigned to IRG-4; fundamental genetic studies uniquely relevant to the etiology of cancer would be assigned to CE.
- With IRG-7 (Health of the Population): In general, if an epidemiological approach is central to the study, review would be in IRG-7; studies of cancer etiology would be assigned to CE.
- With IRG-11 (Infectious Diseases and Microbiology): In general, studies of infections as a trigger of cancer could be assigned to CE or IRG-11 depending on the emphasis of the study; studies of the etiology of cancer would be assigned to CE.
- With IRG-12 (AIDS and Related Research): In general, studies of the etiology of HIV/AIDS-associated cancers would be assigned to IRG-12.
- With IRG 14 (Hematology): In general, applications that focus on normal development or the etiology of abnormal development of hematological cells (including red blood cell malignancies) and other pathologies would be assigned to IRG 14; applications that are exclusively focused on the etiology of leukemia or lymphoma would be assigned to CE.
- With IRG-16 (Endocrine, Metabolism, and Reproductive Sciences): In general, studies of pre-neoplastic, dysplastic and hyperplastic disorders of the reproductive organs would be assigned to IRG-16. Studies of the etiology of endometrial hyperplasia; trophoblast neoplasia; germ cell tumors; pituitary adenomas; as well as thyroid, parathyroid, and adrenal tumors would be assigned to IRG-16; studies of the etiology of tumors of reproductive organs would be assigned to CE.
- With IRG-17 (Musculoskeletal, Oral, and Skin Sciences): In general, studies of pre-neoplastic skin disorders would be assigned to IRG-17; studies of the etiology of oral, head and neck cancer, and bone tumors would be assigned to CE.
- With IRG-18 (Digestive Sciences): In general, studies of pre-neoplastic conditions as a consequence of chronic esophageal or gastrointestinal infection or inflammation, and pre-neoplastic conditions of the liver or pancreas would be assigned to IRG-18.
- With IRG-20 (Renal and Urological Sciences): In general, studies related to differentiation in the context of urinary tract or kidney development or other diseases, or studies focused on benign processes in the kidney, urinary tract, or male genital system would be assigned to IRG-20; studies of early events in malignant transformation focused on the neoplastic process would be assigned to CE.
- With IRG-24 (Brain Disorders and Clinical Neuroscience): In general, studies of malignant transformation and progression in the context of specific brain tumors would be assigned to IRG-24; studies of malignant transformation or progression more broadly applicable to neoplastic processes would be assigned to CE.

II. Cancer Genetics Study Section (CG)

The Cancer Genetics (CG) Study Section reviews grant applications related to the causal agents and target genes involved in tumor pathogenesis. Organ-specific carcinogenesis is included in this study section. Studies using both mammalian and non-mammalian models are included.

Specific areas covered by CG include:

- Oncogene discovery, genomics, and proteomics (including molecular and biochemical profiling)
- Positional cloning
- Animal models for gene discovery
- Cancer genetics: including hereditary and somatic DNA alterations, allelic imbalance/LOH
- Epigenetics: including DNA methylation and imprinting
- Metabolizing enzyme polymorphisms and mutations
- Genomic instability: including microsatellite and chromosomal instability
- Susceptibility/modifier genes that modify susceptibility to cancer without allelic loss including low penetrance genes identified in human and animal models

CG has the following shared interests within the ONC IRG:

- With CE in development of early biomarkers and in organ-specific carcinogenesis. If emphasis is in the etiology of disease it should be assigned to CE, in general other genetic studies should be assigned to CG.
- With TPM as it relates to tumor progression. If genetic control of tumor progression is the central focus, the application should be assigned to TPM.
- With CBSS regarding discovery and evaluation of genetic and epigenetic abnormalities in tumors that may serve as clinical biomarkers. When the focus is on identification of biomarkers for clinical applications, the proposal should be assigned to CBSS; when the focus is on understanding the disease process the applications should be assigned to CG.
- With RTB in genomic instability: If the instability relates to radiation effects the application should be assigned to RTB, other examples of genomic instability should be assigned to CG.
- With DMP in studies of processes and targets involved in oncogenesis. Pharmacological studies should be assigned to DMP while studies focused on cancer genetics would be assigned to CG.

CG has the following shared interests outside the ONC IRG:

- With IRG-2 (Molecular Approaches to Gene Function): In general, if the findings could also be relevant to another area of biomedical research, the study would be assigned to IRG-2; gene function studies uniquely relevant to oncology would be assigned to CG.
- With IRG-4 (Fundamental Genetics and Population Biology): In general, if the findings could also be relevant to another area of biomedical research, the application would be assigned to IRG-4; fundamental genetic studies uniquely relevant to oncology would be assigned to CG.
- With IRG-14 (Hematology): In general studies of the genetics of lymphoma and leukemia would be assigned to CG.

- With IRG-16 (Endocrine, Metabolism, and Reproductive Sciences): In general, studies of the genetics of endometrial hyperplasia; trophoblast neoplasia; germ cell tumors; pituitary adenomas; as well as thyroid, parathyroid, and adrenal tumors would be assigned to IRG-16; studies of genetics of reproductive organ tumors would be assigned to CG.
- With IRG-18 (Digestive Sciences): In general, genetic studies of the pre-neoplastic stages of GI, liver, or pancreas would be assigned to IRG-18; genetic studies of GI, liver, or pancreatic cancers would be assigned to CG.
- With IRG-20 (Renal and Urological Sciences): In general, genetic studies focused on the malignant transformation in the context of urinary tract or kidney development or other diseases; or studies focused on benign processes in the kidney, urinary tract, or male genital system would be assigned to IRG-20; genetic studies of malignant transformation focused on the neoplastic process would be assigned to CG. Studies of genes and their products that are involved in both neoplastic and normal developmental processes (e.g., WT1 and VHL) would be assigned to IRG-20 or CG, depending on the focus of the study.

III. Cancer Molecular Pathobiology (CAMP)

The Cancer Molecular Pathobiology (CAMP) Study Section reviews applications involving the biology of the malignant cell, as it relates to early (initiating) events in transformation. Emphasis is on control of cell growth and death, and the molecular events in gene regulation and protein modification and turnover that underlie this control.

Specific areas covered by CAMP include:

- Gene regulation relevant to cancer, including chromatin structure and remodeling, RNA stability, and translation.
- Alterations in protein stability that are important in the development of malignant phenotypes such as post-translational modifications and abnormal degradation.
- Signaling transduction pathways related to oncogenesis.
- Cell cycle pathways and checkpoints that are altered in malignant cells.
- Cell death pathways (both apoptotic and non-apoptotic) in cancer and the role of caspases.
- Cellular immortalization and senescence pathways (including those mediated through telomeres and telomerase).
- Oncogenes and tumor suppressor genes as they relate to the onset of oncogenesis.

CAMP has the following shared interests within the ONC IRG:

- With TCB: Applications focused on signal transduction primarily related to cell cycle/checkpoints and/or apoptosis should be assigned to CAMP. Other growth factor/signaling applications should be assigned to TCB.
- With CBSS relating to the development of novel biomarkers, signatures, and patterns of tumors. If the focus is on mechanisms, it should be assigned to CAMP.

CAMP has the following shared interests outside the ONC IRG:

- With IRG-2 (Molecular Approaches to Gene Function): In general, studies of normal regulatory processes would be assigned to IRG-2, whereas gene regulation processes critical for transformation and/or tumor progression would be assigned to CAMP. Studies that combine both normal regulatory processes and processes critical for transformation and/or tumor progression would be assigned to an IRG according to the main focus of the research.
- With IRG-3 (Molecular Approaches to Cell Function and Interactions): In general, studies of normal cell biology processes would be assigned to IRG-3 and processes of cell biology that are critical for transformation and/or tumor progression would be assigned to CAMP. Studies that combine both normal cell biological processes and processes critical for transformation and/or tumor progression would be assigned to an IRG according to the main focus of the research.
- With the organ-system IRGs: In general, studies of normal cell biology processes unique to a specific organ system would be assigned to the appropriate organ-system IRG and studies of cell biology directed toward understanding carcinogenesis would be assigned to CAMP.

IV. Tumor Cell Biology (TCB)

The Tumor Cell Biology (TCB) Study Section reviews applications focusing on signal transduction and growth factor regulation of neoplastic transformation and progression.

Specific areas covered by TCB include:

- Signaling by cell surface receptors, growth factors, or cytokines, mediated by protein kinases, phosphatases, or other processes. This includes the analysis of the composition, formation, and functioning of signaling complexes.
- Analysis of cross-talk among signaling pathways.
- Pathways regulated by oncogenes and tumor suppressor genes. How these genes alter signaling in neoplasms and the consequences of these alterations on tumor cell function.
- Hormonal modulation of carcinogenesis, including endocrine signaling as it relates to tumorigenesis, steroid metabolism, and nuclear hormone receptors.
- Differentiation and transdifferentiation in oncogenesis

TCB has the following shared interests within the ONC IRG:

- With CAMP: Applications focused on signal transduction primarily related to cell cycle/checkpoints, apoptosis, or initiating events in oncogenic transformation should be assigned to CAMP. Other growth factor/signaling applications should be assigned to TCB.
- With TME: Applications focused on the effects of extracellular actions of growth factors and other cytokines should be assigned to TME; those focusing on intracellular signaling should be assigned to TCB.
- With CBSS relating to the development of novel biomarkers, signatures, patterns and signaling pathways. If related to diagnosis they should be assigned to CBSS; if related to oncogenesis, they should be assigned to TCB.

- With DT in studies of signal transduction, cell cycle, and differentiation. If not closely related to drug development, these studies should be assigned to TCB.

TCB has the following shared interests outside the ONC IRG:

- With IRG-2 (Molecular Approaches to Gene Function): In general, studies of how genes alter signaling in normal cells and the consequences of those alterations would be assigned to IRG-2; studies of how genes alter signaling in neoplasms and the consequences of those alterations would be assigned to TCB. Proposals that combine studies of gene alterations of signaling in both normal and neoplastic cells would be assigned to an IRG according to the main focus of the proposal.
- With IRG-3 (Molecular Approaches to Cell Function and Interactions): In general, studies of signaling in normal cells would be assigned to IRG-3; studies of signaling processes during neoplastic transformation and progression would be assigned to TCB. Proposals that combine studies of signaling in both normal cells and in neoplastic cells would be assigned to an IRG according to the main focus of the proposal.
- With organ-system IRGs: In general, studies of signaling processes unique to cells in a specific organ system would be assigned to the organ-system IRG; studies of signaling directed toward understanding carcinogenesis would be assigned to TCB.
- With IRG-16 (Endocrine, Metabolism, and Reproductive Sciences): In general, studies of endometrial hyperplasia; trophoblast neoplasia; germ cell tumors; pituitary adenomas; as well as thyroid, parathyroid, and adrenal tumors would be assigned to IRG-16; studies of tumors in reproductive organs would be assigned to TCB. In general, studies of obesity or insulin resistance as a risk factor for cancer would be assigned to IRG-16 if the focus is on mechanisms of metabolic fuel homeostasis or insulin action on cell growth; studies focusing on the mechanism of oncogenesis would be assigned to TCB.
- With IRG-18 (Digestive Sciences): Studies of familial adenomatous polyposis (FAP) as well as the pathology and treatment of polyps in the GI system would be assigned to IRG 18. In general, cell biological studies of GI, liver, or pancreatic cancers would be assigned to TCB. Studies of Barrett's Esophagus would be assigned to IRG-18 or TCB depending on the focus of the study.
- With IRG-24 (Brain Disorders and Clinical Neuroscience): In general, studies of tumor physiology and pathology of the brain would be assigned to IRG-24; studies for which a brain tumors is being used as a model system would be assigned to TCB.

V. Tumor Microenvironment Study Section (TME)

The tumor microenvironment (TME) Study Section reviews grant applications that deal with basic mechanisms of cancer cell interactions with host systems including: immune, inflammatory, stromal, vascular, and extracellular matrix. Emphasis is on evaluation of the tumor as an organ-like structure with complex, dynamic cross-talk. Included are studies of cell adhesion molecules, cell-cell interactions and alterations of extracellular matrix. Studies of tumor angiogenesis, involvement of tumor lymphatic components, and organ-specific metastasis are assigned to this study section.

Specific areas covered by TME include:

- Molecular and cellular aspects of tumor cell biology (including gap junctions, adherens, and tight junctions) and cross-talk with host cells (including connective tissue cells, immune cells, inflammatory cells, and vascular compartments).
- Bi-directional interactions (feedback) during neoplastic progression, angiogenesis and metastasis.
- Cellular and molecular aspects of epithelial-mesenchymal transition and transactivation as it relates to tumor progression.
- Development and exploration of physiologically responsive organotypic models, and models of other tissue-like processes such as angiogenesis, that allow investigation of tumor cells in the context of a tissue-like environment.
- Evaluation of cell-matrix adhesion and its dynamic changes during tumor progression. Dynamics of cell-cell communication for cell survival, growth, and invasion. Included are studies of inter-cellular signaling and production of paracrine factors (including TGF-beta) that regulate matrix formation and remodeling.
- Development and investigation of models for studying organ-specific metastases, including crucial interactions between metastatic cells and bone/bone marrow microenvironment or with other site-specific organs.

TME has the following shared interests within the ONC IRG:

- With TCB: Growth factors in the context of intracellular signaling should be assigned to TCB; growth factor biology, as it affects tumor progression and metastasis, should be assigned to TME.
- With TCB: Activity of modulators of tumor cell adhesion, shape, motility, and invasion as it pertains to intracellular signaling pathways should be assigned to TCB, whereas applications dealing with signals from cells and extracellular matrix should be assigned to TME.
- With TPM: Studies that focus on the role of angiogenesis for progression of tumors should be assigned to TPM; studies of angiogenesis, as it relates to the tumor microenvironment, should be assigned to TME.
- With CBSS regarding "host factors" such as immune signatures and vascular compartments. If the study concerns development of diagnostic biomarkers it would be assigned to CBSS, otherwise it would be assigned to TME.
- With RTB regarding tumor microenvironment: Studies of tumor microenvironment that relate to radiation biology (e.g., hypoxia) should be assigned to RTB; other studies of tumor microenvironment should be assigned to TME.

TME has the following shared interests outside the ONC IRG:

- With IRG-14 (Hematology) and IRG-15 (Cardiovascular Sciences): In general, studies of angiogenesis that are focused on developmentally related processes or reactivation of embryonic processes would be assigned to IRG-14 or -15; studies focused on tumor angiogenesis would be assigned to TME.
- With IRG-16 (Endocrine, Metabolism, and Reproductive Sciences): In general, studies of the interaction of hormones with endocrine glands or reproductive organs and their microenvironment would be assigned to IRG-16; studies of hormonal regulation of endocrine tumors would be assigned to IRG-16 and hormonal regulation of other tumors to TME.

- With IRG-17 (Musculoskeletal, Oral, and Skin Sciences): In general, studies of the interaction of musculosketal, oral, skin, and bone cells with the tumor microenvironments would be assigned to IRG-17; studies focused on tumor cell-microenvironment interactions would be assigned to TME.
- With IRG-18 (Digestive Sciences): In general, studies of the interactions of pre-neoplastic cells of the GI, liver, or pancreas with their microenvironments would be assigned to IRG-18; studies of the interactions of tumor cells from GI, liver or pancreatic with their microenvironment would be assigned to TME.

VI. Tumor Progression and Metastasis Study Section (TPM)

The TPM study section reviews grant applications that deal with basic mechanisms of cancer progression and metastasis. Special emphasis is placed on angiogenesis, hypoxia, invasion, migration/motility and tumor cell extravasation, intravasation, survival, adhesion and growth. Studies focusing on proteases, wound healing and extracellular matrix remodeling, cell adhesion molecules/integrins will also be assigned to this study section. These include *in vitro* and animal studies of malignancies.

Specific areas covered by TPM:

- Mechanisms and contributions of angiogenesis and lymphoid components in both pre-malignant and malignant stages of tumor progression (including the roles of hypoxia, angiogenic factors and their receptors).
- Studies of tumor cell invasion, migration, and motility (including tumor cell intravasation and extravasation).
- Studies on the basic biology of metastasis (including adhesion, growth, and modification of the extracellular matrix environment).
- Studies of the role of proteases and remodeling of extracellular matrix as it relates to tumor progression and metastasis.
- Studies of the mechanisms and roles of wound healing as they relate to tumor progression.
- The contribution of cell membrane specializations (e.g., caveolae and lipid rafts).
- The role of carbohydrate modifications as they relate to invasion/progression.
- Studies of the role of steroid hormones and the mechanisms of hormone independence in tumor progression.
- Developmental processes related to tumor progression, such as stem cell targets for organ-specific cancers.

TPM has the following shared interests within the ONC IRG:

- With CE regarding signal transduction, protein degradation, cell cycle checkpoint, apoptosis, etc.: studies relating to causal processes of cancer should be assigned to CE while those relating to transformation or progression should be assigned to TPM.
- With TME as it relates to angiogenesis: studies focused on angiogenesis in tumor progression should be assigned to TPM, while studies focused on the role of angiogenesis in tumor progression in the context of the tumor microenvironment should be assigned to TME.

- With TME: studies of proteolysis as it relates to cell-matrix or cell-cell interactions should be assigned to TME; studies of proteolysis as it affects tumor metastasis and invasion should be assigned to TPM.
- With CBSS in the discovery and evaluation of markers for angiogenesis, invasion and other aspects of cancer metastasis that may serve as clinical biomarkers: When the focus is on identification of markers for clinical application, the study should be assigned to CBSS; when the focus is on understanding the role of metastasis, the study should be assigned to TPM.
- With RTB, DMP, and DT: studies of potential therapeutic agents targeting the angiogenic pathway may be assigned to RTB, DMP, or DT.

TPM has the following shared interests outside the ONC IRG:

- With IRG-1 (Biological Chemistry and Macromolecular Biophysics) and IRG-3 (Molecular Approaches to Cell Function and Interactions): In general, studies of extracellular matrix and proteolysis dealing with normal cell function would be assigned to IRG-1 or IRG-3; if they relate solely to neoplastic progression they would be assigned to TPM.
- With IRG-5 (Biology of Development and Aging): In general, studies of developmental mechanisms and processes would be assigned to IRG-5; studies directly related to tumor metastasis would be assigned to TPM.
- With IRG-14 (Hematology): In general, studies of red blood cell disorders/malignancies would be assigned to IRG-14; studies of lymphoma and leukemia progression and metastasis would be assigned to TPM.
- With IRG-15 (Cardiovascular Sciences): In general, studies of angiogenesis that are focused on developmentally related processes or reactivation of embryonic processes would be assigned to IRG-15; studies focused on tumor progression and metastasis would be assigned to TPM.
- With IRG-16 (Endocrine, Metabolism, and Reproductive Sciences): In general, studies of endometrial hyperplasia; trophoblast neoplasia; germ cell tumors; pituitary adenomas; as well as thyroid, parathyroid, and adrenal tumors would be assigned to IRG-16; studies of the role of hormones on the progression and metastasis of other tumors and studies of tumors of reproductive organs would be assigned to TPM. Studies of the relation between insulin/IGF signaling and tumor progression and metastasis would be assigned to IRG-16 or to TPM depending on the focus of the study.
- With IRG-17 (Musculoskeletal, Oral, and Skin Sciences): In general, studies of the effect of musculosketal tumors on the overall musculoskeletal system or which provide understanding of the development of the musculoskeletal system would be assigned to IRG-17; studies of musculosketal, skin, and oral tumors and metastasis would be assigned to TPM.
- With IRG-24 (Brain Disorders and Clinical Neuroscience): In general, studies of CNS-unique physiological factors on tumor progression and invasion would be assigned to IRG-24; studies of oncological mechanisms on the progression and invasion of CNS tumors would be assigned to TPM.

VII. Chemo/Dietary Prevention Study Section (CDP)

The Chemo/Dietary Prevention Study Section reviews grant applications that address nutrition, dietary and chemopreventive factors and their use in intervention

for modulation of cancer risk, and inhibition of cancer progression. This study section reviews grant applications dealing with basic mechanistic studies, preclinical and clinical (phase-1 and phase-2) studies as well as discovery, evaluation, and validation of biomarkers.

Specific areas covered by CDP include:

- Discovery and evaluation of diets as well as individual dietary factors, chemopreventive agents, and targets for the modulation of cancer.
- Mechanisms of cancer modulation by chemical and nutritional factors studied at the biochemical, molecular, and cellular levels.
- Preclinical prevention studies (including *in vitro* and *in vivo* evaluation of efficacy and safety).
- Phase-1 and Phase-2 clinical trials of chemopreventive agents.
- Development and validation of markers important in prevention, including markers of cancer risk and progression.
- Design, development, and synthesis of preventive agents.
- Design and development of approaches to the prevention of tumors via other factors, such as exercise or vaccines.
- Diet restriction, antioxidant defense mechanisms, DNA methylation, traditional (e.g., arytenoids, selenium, vitamins) and other food components.
- *In vitro* and *in vivo* pharmacokinetic and pharmacodynamic studies of chemopreventive agents.
- Effect of dietary factors on hormonal carcinogenesis, chemical carcinogenesis, differentiation/transdifferentiation, apoptosis, and oxidative stress

CDP has the following shared interests within the ONC IRG:

- With CE in studies of mechanisms of cancer initiation: When the emphasis is on cancer prevention, the application should be assigned to CDP.
- With CG in the role of gene polymorphisms: When the emphasis is on cancer prevention, the application should be assigned to CDP.
- With TCB in studies of biological markers of cancer and mechanisms of tumor progression: When the emphasis is on cancer prevention, the application should be assigned to CDP.
- With CBSS in proposals to discover, or validate biomarkers for cancer: When the emphasis is on cancer prevention, the application should be assigned to CDP.
- With CII in applications dealing with cancer vaccines and immunological agents: When the emphasis is on cancer prevention, the application should be assigned to CDP.
- With DMP in applications proposing synthesis, isolation, evaluation and validation of new drugs: When the emphasis is on cancer prevention, the application should be assigned to CDP.
- With CONC in applications proposing phase I and II trials and in the development of chemopreventive drugs: When the emphasis is on cancer prevention, the application may be assigned to CDP.

CDP has the following shared interests outside the ONC IRG:

- With IRG-1 (Biological Chemistry and Macromolecular Biophysics): In general, research on the chemistry and synthesis of new agents/drugs would be assigned

to IRG-1; when the emphasis is on cancer prevention, the application would be assigned to CDP.
- With IRG-7 (Health of the Population): IRG-7 reviews applications dealing with cancer prevention that involve a community-based approach, (e.g., use of mass media to increase use of sunscreen, culturally tailored approaches to increase screening compliance).
- With IRG-8 (Risk Prevention and Health Behavior): Studies of human behaviors that relate to cancer risk and the development of behavioral approaches to cancer prevention would be assigned to IRG-8.
- With organ-specific IRGs that deal with health and disease of particular organs/tissues: In general, when the emphasis is on cancer prevention, the application would be assigned to CDP.
- With IRG-16 (Endocrine, Metabolism, and Reproductive Sciences): Studies focusing on insulin resistance or obesity as a risk factor for cancer should be assigned to IRG-16.

VIII. Cancer Biomarkers Study Section (CBSS)

The Diagnostic Oncology Study Section reviews applications addressing the discovery, validation and development of biomarkers for risk, early detection, diagnosis, prognosis and progression of cancer. Research on markers related to predicting treatment response, studies measuring minimal residual disease and monitoring therapeutic efficacy are also considered. The development of bioassays for the discovery and testing of cancer markers may be assigned to CBSS.

Specific Areas covered by CBSS include:

- Identification of biomarkers for disease detection, differential diagnosis, prognosis, predicting response to therapy, monitoring minimal residual disease and measuring tumor burden through analysis and/or molecular profiling of DNA, RNA, and protein from tumor tissue or body fluids.
- Validation of new biomarkers using animal models, human materials and clinical trials.
- Phase-I and phase-II clinical trials where the primary goal is marker validation.
- Phase-III trials (validation studies) of markers for determining risk, early detection or choice of therapy.
- Early detection of cancer, or monitoring its progression or response to therapy using available medical imaging approaches.
- Development of novel methods for biostatistical analysis, informatics, and modeling that facilitate the discovery, evaluation, and use of markers.

CBSS has the following shared interests within the ONC IRG:

- With CE in the identification and evaluation of markers that assess risk (including risks from environmental carcinogens and tumor-associated pathogens): Mechanism-driven studies should be assigned to CE; empirical studies to identify biomarkers for cancer risk and patient-oriented research to assess the clinical utility of markers should be assigned to CBSS.
- With CG regarding discovery and evaluation of genetic and epigenetic abnormalities in tumors that may serve as clinical biomarkers useful for establishing disease prognosis or predicting response to therapy: When the

focus is on understanding the disease process, the application should be assigned to CG; when the focus is on identification of markers for clinical applications, the proposal should be assigned to CBSS.

- With CAMP and TCB in the discovery and evaluation of novel biological markers, signatures, patterns and signaling pathways in normal and tumor tissues: when the focus is on understanding the disease mechanism, the study should be assigned to CAMP or TCB; when the focus is on identifications of markers for clinical application, it would be assigned to CBSS.
- With TME and TMP in the discovery and evaluation of biomarkers for angiogenesis, invasion, tissue or host response and other aspects of cancer progression that may serve as clinical biomarkers: when the focus is on understanding disease mechanisms, the study would be assigned to TPM or TME; when the focus is on identification of biomarkers for clinical application, the study should be assigned to CBSS.
- With CDP in evaluating biomarkers for chemoprevention: studies of biomarkers that relate to monitoring chemoprevention or dietary prevention should be assigned to CDP: Studies focusing on clinical biomarker development should be assigned to CBSS.
- With RTB in the evaluation of markers that monitor trials of radiation therapy: when emphasis is on optimizing radiation therapy or on *in vivo* investigation of radiation response mechanisms, applications should be assigned to RTB; when the emphasis is on evaluation of markers, applications should be assigned to CBSS.
- With CII in the development and characterization of novel targets for immunotherapy and immune response profiling: when the focus is on assessment of the activity of new agents, the study should be assigned to CII; when the focus is on prediction of the patient's response to therapy, the study should be assigned to CBSS.
- With DT in validating molecular markers of tumor and host response: when the focus is on assessment of the activity of new agents, the study should be assigned to DT; when the focus is on prediction of the patient's response to therapy, the study should be assigned to CBSS.
- With CONC in the evaluation of biomarkers that monitor trials of therapy: studies of markers for evaluating novel agents in Phase-1 and -2 trials should be assigned to CONC; retrospective correlative studies and studies of biomarkers that predict response to established therapeutic agents should be assigned to CBSS.

CBSS has the following shared interests outside the ONC IRG:

- With IRG-6 (Bioengineering Sciences and Technologies): In general, the development of new technologies, computational methods, bioinformatics approaches and systems, and mathematical models would be assigned to IRG-6; the application of these approaches to the study of tumor markers would be assigned to CBSS.
- With Organ-system IRGs: In general, studies of biomarkers for the early detection of tumors are shared between the organ-system IRGs and CBSS; studies of biomarkers for progression, differential diagnosis, prognosis, minimal residual disease and prediction of response to chemotherapy would be assigned to CBSS.

- With IRG-21 (Surgical Sciences, Biomedical Imaging and Bioengineering): When the primary focus of a study is to evaluate the potential of novel diagnostic imaging instrumentation or to improve image acquisition or analysis, the study should be assigned to IRG-21; when imaging is directed toward molecular targets for early detection, prognosis, progression or response to cancer therapy, the study may be assigned to CBSS.

IX. Radiation Therapy and Biology (RTB)

The Radiation Therapy and Biology (RTB) Study Section reviews applications dealing with therapeutic interactions of ionizing radiation, radionuclides, electromagnetic radiation, and heat at the molecular, cellular, organ and patient levels. This includes applications in which dose, dose rate, type of radiation, and quality of radiation are variables.

Specific areas covered by RTB include:

- Basic molecular/cellular-radiation/thermal interactions at therapeutic doses: radiation chemistry, DNA repair, cell cycle regulation, hypoxia, signal transduction, apoptosis, heat shock proteins, growth factors, cytokines, oxidative stress, reactive oxygen species, tumor suppressor genes, cytogenetics and genomic instability.
- Mechanisms and applications of modifiers of radiation response (including radiation sensitizers, radioprotectors, fractionation and other modulators).
- Combination of radiation with novel agents (including those targeting growth factors, signaling pathways, or tumor angiogenesis).
- Physics of treatment planning, treatment delivery, and dosimetry of brachytherapy, intravascular brachytherapy, thermal therapy, targeted radionuclide therapy, photodynamic therapy (PDT) and heavy ion or neutron capture therapy.
- Technology and outcome analysis methodologies related to radiation treatment and planning.
- Imaging and image analysis as it relates to targeting of radiation and assessment of response.
- Therapies, including: intensity modulation radiation therapy, conformal therapy, tomotherapy, hyperthermia, PDT (including interstitial PDT), photoimmunotherapy, radiofrequency ablation, cryoablation, intravascular radiotherapy, and radiation-induced gene therapy.
- Pre-clinical studies including: pharmacokinetics, response assessment, efficacy; and internal dosimetry of targeted radio labeled agents (including: antibodies, peptides, oligonucleotides, and liposomes).
- Feasibility studies to establish proof-of-principle of novel radiation therapeutics.
- Radiation carcinogenesis: including the physical and chemical processes leading to DNA damage and cancer.
- Investigations of mechanisms of DNA damage and repair.

RTB has the following shared interests within the ONC IRG:

- With CG: DNA damage and repair topics should be assigned to RTB when relevant to biological response to radiation.

- With CBSS: Imaging studies related to diagnosis, and prognosis should be assigned to CBSS, imaging related to optimization, targeting or implementation of radiation therapeutics should be assigned to RTB.
- With CII: Studies that focus on engineering or design of antibodies or other pharmaceuticals for radiotherapeutic targeting should be assigned to CII. Proposals that focus on dosimetry, dose rates, or effects of isotopes on antibody binding should be assigned to RTB.
- With DT: In general, the development of new approaches to treat cancer would be assigned to DT. Studies of novel biologic modifiers or cytotoxic drugs used to modulate the effects of ionizing radiation, electromagnetic radiation, radionuclide delivery, or heat would be assigned to RTB. Studies involving combinations of IR (radiation) and cytotoxic drugs and/or biologic modifiers that emphasize radiation therapy would be assigned to RTB.
- With CONC: Phase-1, -2, or -3 clinical trials, including those with translational emphasis on radiation therapeutics, should be assigned to CONC.

RTB has the following shared interests outside the ONC IRG:

- With organ-specific IRGs: In general, studies of radiotherapy for the treatment of cancer would be assigned to RTB.

X. Cancer Immunopathology and Immunotherapy Study Section (CII)

This Study Section reviews applications addressing immunologic therapies of cancer and modulation of the innate and adaptive immune responses to cancer cells. This includes in vitro studies, the evaluation of immunotherapeutic strategies in preclinical models, and translational studies leading to pilot and/or phase-1 clinical trials.

Specific areas covered by CII include:

Immunotherapies:

- Development and testing of tumor vaccines: including cell-based vaccines, tumor antigen-based vaccines, DNA vaccines, recombinant viral and bacterial vaccines, and vaccines using genetically modified tumor cells.
- Dendritic cell-based therapies to induce or amplify tumor immunity.
- Assessment of immune response to tumor antigens in cancer patients.
- Use of antibodies, conjugated antibodies, or antibody fragments to target tumor cells *in vivo* or to modulate immune response to cancer cells.
- Autologous, syngeneic, and allogeneic hematopoietic stem cell transplantation as part of cancer treatment.
- Development and testing of methods and models of autologous, syngeneic, and allogeneic immune responses to cancer.
- Cytokine or chemokine therapy to modulate innate or adaptive immune responses to tumors.
- Gene therapy to modulate tumor immune responses.
- Adoptive cellular therapies with immune cells.
- Drug-induced modulation of immune responses in cancer patients.

Biological therapies as they affect host anti-tumor responses:

- Immune modulation with growth factors and growth factor antagonists in model systems of tumors or in patients with cancer.

- Use of signal agonists and antagonists that affect immune responses to tumors (e.g., anti-CTLA-4, CD40-ligand).
- Use of protein, DNA, and RNA biological response modifiers, such as ribozymes and anti-sense oligonucleotides.

Mechanisms of tumor resistance and escape from immune recognition or killing:
- Modulation of tumor antigen processing and presentation.
- Alteration of susceptibility of tumors to innate and adaptive immunologic responses.
- Tumor-induced immune suppression and tolerance.

CII has the following shared interests within the ONC IRG:
- With TME: In general, studies of the tumor microenvironment would be assigned to TME; studies of modulation of the immune response within the tumor microenvironment would be assigned to CII.
- With CBSS: In general, the development of new approaches to diagnosing cancer would be assigned to CBSS; however, the development of novel targets for immunotherapy could be assigned to CII.
- With RTB: Studies focusing on the radiotherapeutic effects of treatment are more appropriately assigned to RTB; studies of radio-conjugated antibodies that focus on immunologic targeting should be assigned to CII.
- With DT: In general, studies focusing on biologic agents and gene therapy approaches for treating cancer would be assigned to DT; studies examining the use of biologic agents and gene therapy approaches to manipulate immune function would be assigned to CII.
- With CONC: Studies focusing primarily on immunotherapy trials in patients are more appropriately assigned to CONC. Studies emphasizing the development of immunotherapeutic approaches that may include translation and development of pilot studies or phase-1 trials should be assigned to CII.

CII has the following shared interests outside the ONC IRG:
- With IRG-10 (Immunology): In general, basic studies of tumor immunity and immune surveillance would be assigned to IRG-10; translational studies that include the development or testing of immunotherapeutic approaches to cancer treatment would be assigned to CII.
- With Organ-system IRGs: In general, translational studies of immunotherapeutic approaches (including stem cell transplantation) to cancer treatment or to modulate tumor immunity would be assigned to CII.
- With IRG-24 (Brain Disorders and Clinical Neuroscience): In general, immuno-therapy studies that focus on tumors of the CNS would be assigned to IRG-24; studies that are applicable to several different tumors would be assigned to CII.

XI. Drug Discovery and Molecular Pharmacology Study Section (DMP)

The Drug Discovery and Molecular Pharmacology (DMP) Study Section encompasses (1) the design, synthesis, isolation, and evaluation of novel agents that are potentially useful in cancer therapy, (2) molecular target identification and validation, (3) design, development, and validation of new preclinical models, and (4) studies of the mechanism of action of new and existing agents.

Specific areas covered by DMP include:

- Synthesis and isolation of new antineoplastic compounds for evaluation in both *in vitro* and *in vivo* tumor model systems, combinatorial and parallel approaches to novel drug identification and modification of existing compounds for study at molecular, cellular and target-tissue levels.
- Development of high throughput and high content *in vitro* and cell-based assays for cancer therapeutics.
- Development and application of new technologies for the drug discovery process, including microarray analysis, data mining and bioinformatics
- Identification and validation of new cancer-relevant molecular targets for therapeutic intervention.
- Basic studies to elucidate the mechanisms(s) of action and resistance to anti-neoplastic agents, fundamental studies of the effects of the agents on macromolecular synthesis, DNA damage and repair, cellular signaling, apoptosis, and related processes.
- Studies of the effects of antineoplastic agents on cell biology, tumor heterogeneity, cell kinetics, drug retention, drug distribution, drug efflux, and cell differentiation.
- Development of drug-delivery strategies.
- Development and validation of novel mammalian and non-mammalian tumor models for anticancer therapeutic experimentation.
- Development and application of mathematical and computational methods to the investigation of combination chemotherapy using small molecules and other modalities.
- Investigation of the effects of chemotherapeutics and steroids on hormone-sensitive target sites.

DMP has the following shared interests within the ONC IRG:

- With CE: Basic studies of processes and targets should be assigned to CE, studies that emphasize the action of drugs should be assigned to DMP.
- With CDP in the evaluation of applications involving synthesis, isolation, evaluation, and validation of new drugs: When the emphasis is on cancer prevention the application should be assigned to CDP. When the emphasis is on drug design or development it should be assigned to DMP.
- With CII: Studies using small molecules, peptides, or oligonucleotides directed against the immune system; using gene therapy directed against host cells, or otherwise involving the immune system should be assigned to CII. Studies using immunoconjugated therapies should be assigned to CII; while studies using other targeted therapies, should be assigned to DMP;
- With DT: Studies of drug action and resistance mechanisms in samples from patients; late-stage target validation in animals and patient, and translational studies should be assigned to DT; some later stage studies involving *in vitro* systems, which may contain a relatively early-stage translational component, could also be assigned to DT. Studies that emphasize early stage development of drugs (e.g., synthesis, mechanism of action, SAR), early target validation studies with cells and animal tumors, and pharmacogenetic and pharmacogenomic studies directed toward therapeutic applications should be assigned to DMP

DMP has the following shared interests outside the ONC IRG:

- With IRG-1 (Biological Chemistry and Macromolecular Biophysics): In general, approaches for the synthesis of new agents, natural product drug discovery, and drug screening would be assigned to IRG-1; when the central focus of the study is on cancer, it would be assigned to DMP.
- With the IRG-6 (Bioengineering Sciences and Technologies): In general, when the major goal is the development of computational methods, bioinformatics approaches, mathematical models, or gene therapies the application would be assigned to IRG-6. If the new approach is being applied to improve cancer therapy, the application would be assigned to DMP.
- With IRG-14 (Hematology) and IRG-15 (Cardiovascular Sciences): In general, studies of drugs directed at angiogenesis that are focused on developmentally related processes or reactivation of embryonic processes would be assigned to IRG-14 or -15; studies of drugs focused on tumor angiogenesis would be assigned to DMP.
- With IRG-16 (Endocrine, Metabolism, and Reproductive Sciences): IRG-16 and DMP share an interest in the use of hormones for treating cancer. Review venue would be based on the focus of the application, when the major focus is on the hormone it would be IRG-16; when the major focus is on cancer, it would be assigned to DMP.
- With IRG-24 (Brain Disorders and Clinical Neuroscience): In general, studies of the detection, etiology, mechanism and treatment of brain tumors would be assigned to IRG-24. Studies of novel therapies for treating brain tumors would be assigned to DMP.

XII. Developmental Therapeutics Study Section (DT)

The Developmental Therapeutics (DT) Study Section reviews applications addressing the experimental therapy of neoplastic diseases in *in vitro* systems and *in vivo* model systems, as well as studies using human tissue, including some early-stage, pilot clinical trials. The major emphasis of this study section is on the rational development of novel therapeutic strategies that have a significant potential for early translation to the clinic.

Specific areas covered by DT include:

- Translational studies of: conventional chemotherapeutic agents, mechanisms of action and resistance, and strategies to circumvent resistance.
- Novel molecular targets involving agents that modulate signal transduction, cell cycle, differentiation, or angiogenic or apoptotic pathways.
- Rational combination of conventional cytotoxic drugs with novel agents including those targeting: growth factors, signaling, cell cycle regulation, or angiogenic and differentiation pathways.
- Early-stage, pilot clinical trials of novel therapeutic and drug-delivery strategies involving pharmacokinetic, pharmacodynamic, toxicologic, or pharmacogenomic end points.
- Pre-clinical models of drug toxicity to host organs.
- Gene therapy involving non-immunologic targets.
- Therapeutic approaches involving biologic response modifiers, including hormonal agents, either alone or in combination with novel or conventional drugs.

- Validation of novel molecular targets in human tissues, including those obtained in conjunction with early clinical trials.

DT has the following shared interests within the ONC IRG:

- With CE in studies of signal transduction, cell cycle regulation, apoptosis, and differentiation: If the study is not therapeutically oriented it should be assigned to CE; if the study is therapeutically oriented it should be assigned to DT.
- With TCB in studies of signal transduction, cell cycle regulation, apoptosis, and differentiation: If the study is not therapeutically oriented it should be assigned to TCB; if it is therapeutically oriented it should be assigned to DT.
- With CBSS in validating molecular markers of tumor response. When the focus is on prediction of the patient's response to therapy, the study should be assigned to CBSS. Studies focusing on the assessment of new drug activity should be assigned to DT.
- With RTB in studies involving combinations of ionizing or electromagnetic radiation with conventional or novel cytotoxic drugs. If the emphasis is on radiation, the study should be assigned to RTB; if the emphasis is on the cytotoxic drug it should be assigned to DT.
- With CII in studies of combinations of biologic response modifiers with cytotoxic drugs or gene therapy. Gene therapy studies involving immunologic targets should be assigned to CII.
- With DMP: Studies of novel molecular targets involving agents that modulate signal transduction, cell cycle, differentiation, or angiogenic or apoptotic pathways may be assigned to DMP or DT.
- With DMP: Early studies of therapeutic agents, including studies of drug action and resistance, should be assigned to DMP. Advanced animal studies or translational studies should be assigned to DT.
- With DMP: Early target studies with cells and animal tumors should be assigned to DMP; late-stage target validation in animals and in samples from patients should be assigned to DT.
- With DMP: in mechanistic studies of novel agents and drug action or resistance. In general, the focus of DMP is on early-stage drug discovery and development; studies involving animal models or patient materials should be assigned to DT. However, some later stage studies involving *in vitro* systems, which may contain a relatively early-stage translational component, could also be assigned to DT.
- With CONC: Studies of the mechanism of drug action/resistance should be assigned to DT. Correlative laboratory studies involving early clinical trials would be assigned to DT or CONC depending on the focus of the application.

DT has the following shared interests outside the ONC IRG:

- With IRG-14 (Hematology): In general, studies of bone marrow transplantation would be assigned to IRG-14; studies of bone marrow transplantation related to leukemias or other tumors would be assigned to DT, studies focused on the diagnosis and treatment of lymphomas and leukemias would be assigned to DT.
- With IRG-14 (Hematology) and IRG-15 (Cardiovascular Sciences): In general, studies of the treatment of angiogenesis that are focused on developmentally related processes or reactivation of embryonic processes would be assigned to IRG-14 or -15; studies of treatments focused on tumor-related angiogenesis would be assigned to DT.

- With IRG-16 (Endocrine, Metabolism, and Reproductive Sciences): IRG-16 and DT share an interest in the use of hormones for treating cancer. Review venue would be based on the focus of the application, when the major focus is on the hormone it would be IRG-16; when it is cancer treatment, it would be DT.
- With IRG-18 (Digestive Sciences) Studies of the treatment of Barrett's Esophagus and GI polyps should be assigned to IRG-18.
- With IRG-24 (Brain Disorders and Clinical Neuroscience): In general, chemo-therapy and gene therapy studies that focus on outcome variables associated with CNS functions would be assigned to IRG-24; studies that are applicable to several different types of tumor would be assigned to DT.

XIII. Clinical Oncology Study Section (CONC)

The Clinical Oncology Study Section reviews applications in the areas of clinical patient-oriented research and clinical therapeutic trials. This includes clinical trials with therapeutic intent using drugs, radiation, surgery, and/or biological agents.

Specific areas covered by CONC include:

- Chemotherapy
- Surgical oncology
- Immunotherapy
- Vaccine and gene therapy
- Radiation therapy and radiopharmaceuticals
- Combined modality therapy
- Pharmacologic and toxicologic studies of new therapeutic modalities in patients
- Non-behavioral alternative cancer therapies
- Correlative studies relevant to therapeutic clinical trials
- Trials and research on the treatment of cancer therapy-related nausea and vomiting, pain, mucositis, alopecia and fatigue
- Age-specific issues including: changes in tumor behavior with aging, clinical and laboratory assessment of the older cancer patient, age-related factors that withstand effective cancer treatment, coordination of care of the older cancer patient, pharmacology of chemotherapy agents, and amelioration of toxicity.

CONC has the following shared interests within the ONC IRG:

- With CII for some experimental immunotherapy studies: In general, preclinical studies would be assigned to CII and clinical studies by CONC.
- With RTB: Basic and translational studies of radiotherapy (mechanisms, actions, radiobiology, etc.) would be assigned to RTB, early clinical trials and evaluations of novel therapeutic approaches would be assigned to CONC.
- With DT: Preclinical and translational studies of drug activity would be assigned to DT, while clinical studies would be assigned to CONC.

CONC has the following shared interests outside the ONC IRG:

- With IRG-4 (Fundamental Genetics and Population Biology): In general research relating to polymorphisms would be assigned to IRG-4; studies having a clinical component would be assigned to CONC.
- With the IRG-7 (Health of the Population): Epidemiological studies of cancer would be assigned to IRG-7, while clinical studies would be assigned to CONC.

- With IRG-8 (Risk Prevention and Health Behavioral): Studies of human behaviors that relate to cancer risk and the development of behavioral approaches to cancer prevention would be assigned to IRG-8.
- With IRG-10 (Immunology) There is a shared interest between IRG-10 and IRG-13 in the use of bone marrow to treat hematological cancers. However, clinical studies should be assigned to CONC.
- With IRG-11 (Infectious Diseases and Microbiology) In general, clinical studies of tumor-associated viruses or other pathogens would be assigned to CONC.
- With IRG-14 (Hematology): In general, clinical studies of hematological malignancies would be assigned to CONC.
- With IRG-18 (Digestive Sciences) Studies of the treatment of Barrett's Esophagus and GI polyps should be assigned to IRG-18.
- With IRG-21 (Surgical Sciences, Biomedical Imaging, and Bioengineering): Where the focus of the study is the evaluation of a radiological approach, review would be in IRG-21; clinical studies of cancer diagnosis using established radiological procedures or studies focusing on therapy would be assigned to CONC.